

INTERNATIONAL SEARCH REPORT

International Application No
PCT/IT 03/00864

A. CLASSIFICATION OF SUBJECT MATTER
IPC 7 A63B69/40 F41B11/32 F16K31/383

According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)

IPC 7 A63B F41B F16K

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practical, search terms used)

EPO-Internal, WPI Data, PAJ

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X A	US 5 647 338 A (MARTIN) 15 July 1997 (1997-07-15) the whole document -----	1,2,7, 36,37,39 20
X Y	US 3 662 729 A (ENDERSON) 16 May 1972 (1972-05-16) cited in the application column 2, line 69 - column 4, line 17; figures 1,3 -----	1,2,7, 36,37 23,27
Y A	US 2 304 841 A (MIKKELSEN) 15 December 1942 (1942-12-15) figures 1,5 -----	23,27 1,36,37, 39
X	US 2 998 810 A (ANASTASIA ET AL.) 5 September 1961 (1961-09-05) the whole document ----- -/-	1-4

☒ Further documents are listed in the continuation of box C.

☒ Patent family members are listed in annex.

* Special categories of cited documents:

- *A* document defining the general state of the art which is not considered to be of particular relevance
- *E* earlier document but published on or after the international filing date
- *L* document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)
- *O* document referring to an oral disclosure, use, exhibition or other means
- *P* document published prior to the international filing date but later than the priority date claimed

- *T* later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention
- *X* document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone
- *Y* document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art.
- *Z* document member of the same patent family

Date of the actual completion of the international search

17 December 2004

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11.01.2005

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C.(Continuation) DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X A	US 4 951 644 A (BON) 28 August 1990 (1990-08-28) the whole document -----	1-3,5,7, 36,39 4
X	US 5 967 133 A (GARDNER, JR.) 19 October 1999 (1999-10-19) column 4, line 55 - column 8, line 29; figures 1-4 -----	1,2,7,39
X	US 5 572 982 A (WILLIAMS) 12 November 1996 (1996-11-12) the whole document -----	1-3,7,39
A	GB 2 258 913 A (WILKINS) 24 February 1993 (1993-02-24) the whole document -----	1-4,7
A	US 5 228 427 A (GARDNER, JR.) 20 July 1993 (1993-07-20) column 5, line 48 - column 6, line 27; figures 5-8 -----	6

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Box I Observations where certain claims were found unsearchable (Continuation of item 1 of first sheet)

This International Search Report has not been established in respect of certain claims under Article 17(2)(a) for the following reasons:

1. ☐ Claims Nos.:
because they relate to subject matter not required to be searched by this Authority, namely:
2. ☐ Claims Nos.:
because they relate to parts of the International Application that do not comply with the prescribed requirements to such an extent that no meaningful International Search can be carried out, specifically:
3. ☐ Claims Nos.:
because they are dependent claims and are not drafted in accordance with the second and third sentences of Rule 6.4(a).

Box II Observations where unity of invention is lacking (Continuation of item 2 of first sheet)

This International Searching Authority found multiple inventions in this international application, as follows:

see additional sheet

1. ☐ As all required additional search fees were timely paid by the applicant, this International Search Report covers all searchable claims.
2. ☐ As all searchable claims could be searched without effort justifying an additional fee, this Authority did not invite payment of any additional fee.
3. ☒ As only some of the required additional search fees were timely paid by the applicant, this International Search Report covers only those claims for which fees were paid, specifically claims Nos.:
1, 2-7, 23-27, 36-39
4. ☐ No required additional search fees were timely paid by the applicant. Consequently, this International Search Report is restricted to the invention first mentioned in the claims; it is covered by claims Nos.:

Remark on Protest

- ☐ The additional search fees were accompanied by the applicant's protest.
- ☒ No protest accompanied the payment of additional search fees.

FURTHER INFORMATION CONTINUED FROM PCT/ISA/ 210

This International Searching Authority found multiple (groups of) inventions in this international application, as follows:

1. claims: 1,2-7,36-39

An apparatus for launching balls for sports practice, comprising a tank, a launch tube with an open end and a ball seat, an exhaust duct operatively connected between the tank and the launch tube, a rapid opening device for discharging fluid from tank, and throttling means comprising a fixed part and a movable part mounted in exhaust duct. (Object: to enable the effective section of the exhaust duct to be varied)

2. claims: 1,8-22,28

An apparatus for launching balls for sports practice, comprising a tank, a launch tube with an open end and a ball seat, an exhaust duct operatively connected between the tank and the launch tube, a rapid opening device for discharging fluid from tank, and throttling means mounted in the exhaust duct, said rapid opening device comprising a main valve, an actuation valve determining the actuation of the main valve, and a control valve which drives the opening of the main valve and which is controlled by the actuation valve. (Object: to open the main valve quickly in order to discharge fluid from the tank)

3. claims: 1,23-27

An apparatus for launching balls for sports practice, comprising a tank, a launch tube with an open end and a ball seat, an exhaust duct operatively connected between the tank and the launch tube, a rapid opening device for discharging fluid from tank, throttling means mounted in the exhaust duct, and means for varying the position of said ball seat. (Object: to vary the trajectory of a launched ball)

4. claims: 1,29-31

An apparatus for launching balls for sports practice, comprising a tank, a launch tube with an open end and a ball seat, an exhaust duct operatively connected between the tank and the launch tube, a rapid opening device for discharging fluid from tank, throttling means mounted in the exhaust duct, and an annular element positioned an appropriate distance from the open end of the launch tube. (Object: to enhance launch precision)

5. claims: 1,32-35

FURTHER INFORMATION CONTINUED FROM PCT/SA/ 210

An apparatus for launching balls for sports practice, comprising a tank, a launch tube with an open end and a ball seat, an exhaust duct operatively connected between the tank and the launch tube, a rapid opening device for discharging fluid from tank, throttling means mounted in the exhaust duct, and an annular chamber mounted coaxially to the launch tube with an inner slit in correspondence with the open end of the launch tube, and a plurality of lateral slits.
(Object: to reduce launch noise)

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Patent document cited in search report		Publication date	Patent family member(s)	Publication date
US 5647338	A	15-07-1997	NONE	
US 3662729	A	16-05-1972	NONE	
US 2304841	A	15-12-1942	NONE	
US 2998810	A	05-09-1961	NONE	
US 4951644	A	28-08-1990	NONE	
US 5967133	A	19-10-1999	US 5881707 A US 6035843 A CA 2304621 A1 EP 1023569 A1 JP 2001521133 T WO 9920971 A1 AT 186980 T AU 1951597 A CA 2214364 A1 CA 2480024 A1 DE 69700825 D1 DE 69700825 T2 EP 0815408 A1 JP 11502605 T WO 9726498 A1 US 2003024521 A1 US 6474326 B1 US 2004134476 A1	16-03-1999 14-03-2000 29-04-1999 02-08-2000 06-11-2001 29-04-1999 15-12-1999 11-08-1997 24-07-1997 24-07-1997 30-12-1999 27-07-2000 07-01-1998 02-03-1999 24-07-1997 06-02-2003 05-11-2002 15-07-2004
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GB 2258913	A	24-02-1993	NONE	
US 5228427	A	20-07-1993	NONE	